Abstract

The present invention relates to a process for obtaining mammalian insulin secreting cells in vitro, characterized in that it contains the following steps: a) preparation of the mammalian pancreatic tissues by removal of a pancreas, b) dissociation of the pancreatic tissues obtained in step (a) into isolated pancreatic cells, c) possibly the elimination of the endocrine cells from the pancreatic cells isolated in step (b), d) induction of dedifferentiation of the cells isolated in step (b) into ductal precursor cells, e) induction of redifferentiation of the ductal precursor cells obtained in step (d) into insulin secreting cells. It also concerns the use of the insulin secreting cells thus obtained for the preparation of a pharmaceutical composition which can be used for the treatment of pancreatic pathologies and particularly diabetes.